



# Introduction

## February 2003



## **A. OVERVIEW**

Undeniably, technology has changed the face of the world. Perhaps most significantly, technology has dramatically accelerated the rate at which change occurs. Today, change happens faster than ever before in the course of human history – to the point where revolutionary change and evolutionary change are almost indiscernible. This unprecedented rapidity in the rate of change poses major challenges to government, business, and individual alike.

In Massachusetts, fast-paced change brought about by technology touches each and every citizen, business, and employee of the Commonwealth. Indeed, one of the biggest issues facing the business of government in Massachusetts today is how to better understand and meet the evolving needs of its customers: businesses, agencies, staff, and the general public. In its sweeping effects on society as we know it, technology has come to be one of the key enablers of business and government to provide product and service.

Information Technology (IT) plays a critical role in meeting the new demands placed upon modern government: services that are better, faster, cheaper, safer, and more available to greater numbers of people. Massachusetts's customers – those who demand information from and transact business with the Commonwealth – have developed extremely high expectations around government's ability to effectively harness technology to render better service. No doubt these expectations have been shaped in large part by recent e-commerce trends in the private sector.

IT plays a critical role in how business is accomplished in non-citizen facing systems that support e-government processes. A very large portion of the Commonwealth's citizens may not need to access information or transact business on a portal, but they depend on a wide variety of services covering health, safety, and education. Yet, every one of these services depends on technology to various degrees. In this broader view, e-government must extend far beyond the portal to reap benefits of electronic government transformation. And the information requirements for integrity, availability, and security extend to all systems, citizen-facing as well as "back office" support functions.

Massachusetts requires a unilateral approach to governing and managing its information technology to effectively maintain its e-government portal efforts as well as to meet the growing needs of its customers while moving to the next stage of e-government transformation. Information Technology infrastructures and management practices that cannot reach across the government's various branches and agencies are destined to enjoy only limited success in being able to satisfy customers. Customers must be able to experience government in the Commonwealth as a single seamless entity, not merely as an aggregation of numerous independent agencies. To this end, Massachusetts must embrace an *enterprise-wide* approach in

the utilization of technology to deliver information and service that is cross-functional, collaborative, and without boundaries.

The Massachusetts Legislature recognized the benefits of an enterprise approach by directing a new special commission as part of IT Bond III, which was approved on June 26, 2002. The purpose of the IT Commission is to, “...recommend an enterprise-wide strategy, including all 3 branches of government and the constitutional offices, for the commonwealth’s information technology infrastructure, system development and governance.”<sup>8</sup>

IT Commission members were appointed from among positions of leadership in both the public and private sectors.<sup>9</sup> After the election of Governor Romney in November 2002, IT Commission co-chairs met with the transition team to discuss the Commission’s charter and membership. The transition team endorsed the initiative, and welcomed the Commission’s findings and recommendations as inputs to the transition team’s work.

## **B. BACKGROUND AND PURPOSE**

The present day context of implementing an enterprise-wide approach to information technology is as compelling as it is challenging. This report will address a number of the opportunities before the Commonwealth to reshape and improve its IT resources, practices, and potential; however, it is first important to acknowledge several of the key change drivers and challenges in the current business environment, specifically:

- a) the increased challenges and expectations by constituents for e-government services,
- b) the heightened emphasis surrounding homeland security post-September 11<sup>th</sup>,
- c) the current economic condition, and
- d) the present-day political climate.

While these four factors create a context that is already saturated with change, they also present forceful evidence as to why Massachusetts will require an enterprise framework to meet the changing climate and the new expectations for government.

The first significant factor is the increased challenges and expectations for the Commonwealth to expand current e-government services. While the Commonwealth has made significant progress in e-government through the *Mass.Gov* initiative, the Commonwealth will continue to face more demanding performance expectations from the public with businesses, citizens, and employees, and new business processes and procedures—all necessitating fast-paced and unsettling transformations.

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<sup>8</sup> Chapter 142 of the Acts of 2002, Section 6.

<sup>9</sup> Appendix A, Commission Charter, provides information on IT Commission members.

E-government is the evolution of the technology from mainframe processing to a complex infrastructure of networked computing and communications. From an operational perspective, e-government applications hold the promise to replace the 8-to-5, over-the-counter, employee-intensive, clerical-oriented tasks with 24 hours a day, seven days a week (24 x 7), self-service operations featuring access to information and services, anytime and anywhere. As a result, the service benefits and operating economies made possible by e-government also require significant up-front monetary investments and cultural changes within government. Emerging technologies must be employed; more stringent security and reliability requirements must be met; old business models and processes must be redefined; and one-time investment and ongoing operating funds must be obtained and coordinated. Outmoded laws must be revamped and organizations must be restructured.

The aggregating of similar e-government transactions, supporting the full spectrum of e-government (citizen facing and back office transactions), from all agencies through common technical resources spreads the fixed costs of this infrastructure over high volumes to reduce unit costs. In addition, reusable technical components can be used in e-government applications to reduce redundancy and increase reliability of processing. An enterprise IT approach will be a requirement for the Commonwealth to keep pace with the e-government demands of the future.

The second factor in considering both the challenges and benefits of an enterprise IT approach is the elevated awareness around national and homeland security in the post September 11<sup>th</sup> world. Political and economic factors such as changing administrations and budgeting problems are all set against the backdrop of this larger national issue – one which, with President Bush’s signing of the “Homeland Security Act of 2002”, has moved beyond mere national awareness to become a significant legislative factor. All fifty states, along with their agencies, businesses, and individual citizens, are being called upon to think about and address how to better protect themselves from threats of all sorts. Clearly, the availability of accurate, secure, reliable information *and* the ability to share that information quickly, unilaterally, and seamlessly across myriad dimensions of government, business, and the public are critical success factors in fulfilling the vision of homeland security in this country. This complexity becomes a compelling case for the Commonwealth to aggressively move towards an enterprise IT approach – one that proactively promotes the aggregation and dissemination of first-rate information across numerous agency boundaries. Furthermore, the specific threat of cyberterrorism is one of the vulnerabilities receiving particular focus in the homeland security effort. Massachusetts needs an enterprise approach to protect itself and its IT assets from this specific threat.

The current economic situation in Massachusetts represents a third factor of considerable importance to the enterprise IT strategy effort. With the Commonwealth facing a substantial budget shortfall, the year ahead promises a number of difficult

decisions, particularly in the area of funding cuts, which make it harder for the Legislature to consider major strategic initiatives. Still, increased pressures to cut costs and grow revenue in and around the Commonwealth present a key opportunity and sound business case for an enterprise IT framework in Massachusetts. A framework is required for agencies to plan, acquire, develop, implement, use, and measure the operational value of technology to support agency missions and objectives with integrity, security, and availability of IT systems and information. Also, a framework that promotes leveraged buying power, reduction of overlapping costs, and elimination of duplicate, non-value-added efforts poses great promise in an environment of growing financial pressure.

The fourth change consideration is one that has received considerable attention in recent months: the election of a new Governor and the imminent changes in the executive administration. While the executive branch has not changed political party, the transition to the new administration of Governor Romney is a significant component of the current change environment in Massachusetts state government. The work and recommendations of the IT Commission will undoubtedly be one of a host of issues vying for consideration on the Governor's new agenda. If the IT Commission is able to make recommendations around the adoption of an enterprise IT framework, which not only complement but enhance other critical initiatives on the Governor's agenda, they create an enormous win potential for both the Commonwealth's government and its constituents.

Economic pressures, changing political leadership, increasing expectations of government, and the need for heightened security all combine to create a challenging environment, defined by change. Still, these very same factors reinforce the need for an enterprise approach to managing IT in the Commonwealth. The implementation of an enterprise IT framework offers an effective response to the Commonwealth's needs in each of these areas, and has the potential to be *the* key enabler of the next generation of government services.

### C. AN ENTERPRISE PERSPECTIVE

Information Technology (IT) has become a powerful tool for almost everything we want to accomplish in government. How we maximize its utility, and manage it, can dramatically impact the efficiency, effectiveness, and citizen-centric focus of government services and programs. Getting IT right is becoming more critical than ever for governments in meeting the demands of citizens, businesses, and employees who are expecting the same high level of service they are receiving in the private sector.

For Massachusetts to “raise the bar” in the delivery of government services, it must aggressively pursue reforming the way it governs, manages, and leverages the IT enterprise throughout the Commonwealth. Citizens view the Commonwealth as “one government” not a collection of agencies, departments and authorities. Creating that “single view of government” will come about only when IT-based reforms are implemented and can impact how government conducts its business.

At the same time, it is important to note that IT is only the “enabler to change.” Responsive, innovative, cost efficient, and customer-centric government will result only when we examine existing processes. The potential for technologies to dramatically change business practices is great. Technology advances may either prompt an examination of business processes by enabling a new way to accomplish a task (such as the introduction of the fax machine or e-mail). Or technology may be applied to an existing process, such as Web self-service. In either case, technology remains only the enabler to re-engineer processes that create value for the end-user.

*In a recent article, Dr. Jerry Mechling, Professor at Harvard University's Kennedy School of Government (and a member of the Massachusetts IT Commission), highlights that IT-based ways of working have recently become:*

- **The best way for cost-cutting**, with networked delivered self-service cutting 90% and more of the unit costs of many commercial and government offerings.
- **The best means for service improvement** with 24/7 accessibility, integration, and customization that changes public expectations and standards.
- **A key tool for management improvement**, with better information for decisions, better controls over fraud and abuse, and greater capacity for innovation and program evaluation.
- **A key tool for improving transparency and accountability**, especially for large and often mistrusted institutions, public and private.
- **A key tool for economic development**, as jobs can move to any place with good access to the global information infrastructure.
- **A key tool for security against terrorism and other threats**, offering capabilities for homeland security and cyber security as well as military defense.

Source: Jerry Mechling, “Why the Administration’s Success Depends on How We Manage Information Technology”, Draft Memo to the Governor’s Transition Team, 6 Nov 2002.



#### **D. DEVELOPING AN ENTERPRISE IT STRATEGY: WHY NOW?**

In the first meeting of the IT Commission, Peter Quinn, the newly arrived Chief Information Officer (CIO) for the Commonwealth of Massachusetts, described the timing of this legislatively mandated Enterprise IT Strategy initiative as “the perfect storm” for addressing IT governance and management issues in Massachusetts. As Mr. Quinn pointed out, the pending economic/budget crisis, the election of a new administration, the need to expand e-government services, and the demand to address security concerns after September 11, 2001 are all converging, offering unparalleled opportunity to strategically position the Commonwealth to address the overall management and delivery of IT services.

Consider these factors:

- Massachusetts is facing a budget deficit of \$2 billion dollars.<sup>10</sup>
- The Legislature approved IT Bond III in June 2002, which included \$300M for IT investments and established an IT Commission to develop an enterprise strategy for the Commonwealth’s IT infrastructure, system development, and governance.
- The new Romney Administration will be looking at ways to consolidate government services, implement cost saving initiatives, and improve government delivery of services.
- Peter Quinn, the CIO for the Commonwealth, has recently been tapped by the Romney Administration to continue leading IT policy and operations.
- *Mass.Gov* has been tremendously successful in gaining momentum for e-government services and in transforming constituent interaction with Commonwealth agencies while at the same time raising constituent expectations of government.
- Post-September 11<sup>th</sup> security initiatives are underway throughout the Commonwealth, and need to be coordinated to maximize their overall effectiveness.
- For the third year running, identity theft has been the most frequently cited reason why individuals contact consumer protection authorities.<sup>11</sup> Within the Commonwealth, there is awareness that privacy, security, and the ethical and responsible use of IT are key issues.

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<sup>10</sup> Yvonne Abraham, “Mass. Woes Called Worst Since ’30s,” *Boston Globe*, 5 Dec 2002: A1.

<sup>11</sup> Federal Trade Commission, “FTC Releases Top 10 Consumer Complaint Categories in 2002”, 22 Jan 2003.



The simultaneous impacts of these factors help set the stage and build the business case for the Massachusetts IT Commission to make bold and significant recommendations regarding an Enterprise IT Strategy for the Commonwealth.

## E. ASKING THE RIGHT QUESTIONS

During the various interviews, more than one person stated that the key to developing an enterprise strategy rests in asking the right questions. As one IT Commissioner remarked, “We need to think through what we want technology to do for government.” He went on to say that often “you see what you look for and see what you know.” He was firmly convinced that for this effort to succeed, the Commission must identify the right questions before crafting the answers.

There are four key drivers facing government leaders as they seek to manage IT in today’s government environment. They include:

- Managing the economic pressures of budget deficits;
- Addressing change management issues;
- Dealing with constituent expectations;
- Proactively addressing security risk concerns.

All of these drivers are important, but each one offers its own unique challenges. Collectively, they can present competing demands that need to be dealt with strategically and holistically.

<b>ECONOMIC PRESSURES :</b>	<b>MANAGING CHANGE:</b>
<ul style="list-style-type: none"> <li>• Does the Commonwealth know what it is spending on IT?</li> <li>• Is the Commonwealth doing all that it can to leverage its buying power?</li> <li>• Is the Commonwealth doing all it can to leverage strategic partnerships with its suppliers?</li> <li>• Can the Commonwealth evaluate and validate the extent to which IT infrastructure and systems that are duplicative in nature justify the investments?</li> <li>• Does the investment in IT improve the performance of the enterprise?</li> </ul>	<ul style="list-style-type: none"> <li>• Is there a mandate for change?</li> <li>• Who should lead and manage change in government?</li> <li>• Is ITD up to the challenge?</li> <li>• Are there incentives for agencies and other entities to cooperate in an enterprise approach?</li> <li>• How can the Commonwealth conduct meaningful multi-year planning for the IT enterprise?</li> <li>• Is the Commonwealth in a single business of government or in 170+ different businesses?</li> </ul>

MEETING NEW EXPECTATIONS :	ADDRESSING SECURITY AND RISKS :
<ul style="list-style-type: none"> <li>• How is IT going to deliver the functions of government more ubiquitously and efficiently?</li> <li>• Does the Commonwealth have the enterprise infrastructure to meet the growing citizen demand for e-government?</li> <li>• Do the IT systems in the Commonwealth adequately communicate with and provide services to its constituents?</li> <li>• If the Commonwealth “builds it,” can citizens “come” (i.e. the digital divide)?</li> </ul>	<ul style="list-style-type: none"> <li>• Has legislation kept pace with new security expectations?</li> <li>• Is there a comprehensive security strategy in place to address performance, system and data integrity, and availability?</li> <li>• How can the Commonwealth insulate itself from the risks of the volatile technology marketplace?</li> <li>• How does the Commonwealth balance the need for public access to information with security requirements?</li> </ul>

## F. GUIDING PRINCIPLES

The IT Commission adopted the following values as guiding principles for developing its recommendations. These values represent the Commission’s ideals for the future enterprise IT environment in Massachusetts. As the Commonwealth moves forward with this work, the Commission recommends the continued use of these guiding principles as a framework within which to consider critical decisions affecting the nature of the future IT environment.

### *SINGLE FACE OF GOVERNMENT*

Achievement of a seamless service interface that provides citizens, businesses, and employees in Massachusetts with a simple, fast, convenient, and personal way to access information and receive services, from all levels of government.

### *STRATEGIC DIRECTION WITH A COMMON VISION*

A well-crafted enterprise IT strategy, aligned with an enterprise business strategy, which has buy-in from executive-level stakeholders throughout the Commonwealth and encourages the enterprise perspective to become an influential factor in agency decision-making.

### *BUSINESS VALUE*

IT investments that realize positive returns on investment, based on total cost of ownership and cost/benefit analyses, and enhance the business objectives of government agencies.

#### **Values**

- Single Face of Government;
- Strategic Direction with a Common Vision;
- Business Value;
- Collaboration;
- Pragmatism;
- Discipline;
- Agility;
- Accountability;
- Integrity;
- Equity in Access;
- Leveraging of What Works.

### ***COLLABORATIVE, PRAGMATIC, AND DISCIPLINED APPROACH***

An enterprise IT environment that promotes collaboration among all branches and levels of government; is realistic in terms of authority, technology, and funding requirements; and instills discipline through a management control framework that includes agreed-upon ownership responsibilities, accountable processes, and metrics for outcome evaluation.

### ***AGILITY***

An enterprise architecture and supporting management processes that can respond rapidly to ever-advancing technology, and succeed in balancing existing investments in IT infrastructure against opportunities presented by emerging technologies. An enterprise infrastructure that fosters collaboration across traditional boundaries is key to enabling business agility.

### ***ACCOUNTABILITY***

Accountability has three aspects: standards, assessments, and consequences. Adoption of metrics, standardization of processes and procedures, portfolio management, service level agreement guidelines, and on-going project oversight reviews that ensure visibility into project progress as well as provide assurance mechanisms will more clearly define accountability for success.

### ***INTEGRITY***

It is essential that all users know that the systems and the information collected can be relied upon. There are two aspects to integrity:

- System integrity – An IT infrastructure that ensures that information that is captured, stored, and provided by technology is relevant and reliable, secure, and available when needed.
- Personnel integrity – The ethical and responsible use of information collected by government is paramount to the success of e-government. Assurance mechanisms and adequate controls are essential to making certain that information collected is used appropriately.

### ***EQUITY IN ACCESS***

Access to Web-enabled government services for citizens and businesses throughout Massachusetts through affordable, reliable, high-speed connectivity. The communication infrastructure is key to the Commonwealth's ability to attract, retain, and develop new businesses. Connectivity is also an essential element in cultivating a well-trained workforce, which, in turn, will help keep the Massachusetts economy viable.

*LEVERAGING OF WHAT WORKS*

An expansion and leveraging of the Commonwealth's IT successes:

- There are pockets of collaboration within and between agencies that have resulted in the development and implementation of shared infrastructure [e.g., Commonwealth Information Warehouse, Human Resources and Compensation Management System (HR/CMS), MassMail] and the momentum for continued cooperation based on these successes. Also, the CIO Council is a highly supported, well-received effort at improving communications and knowledge sharing among ITD's executive team and agency CIOs. The Enterprise Security Board fosters cross-agency collaboration on security policy issues and on training related to security technologies and standards.
- The IT Bond Fund is lauded on a national basis for funding IT infrastructure investments as capital projects.
- Individual entities within the Commonwealth have developed areas of specialized expertise: the Department of Revenue for security; UMass for delivering high-speed backbone capability; the Department of Public Health for business continuity planning and project management discipline; Berkshire Connect and MassConnect for furthering economic development and overcoming the digital divide; etc.
- The Commonwealth's EGov initiative was a highly collaborative effort that succeeded in developing a strategic plan that continues to be the blueprint for guiding EGov investments today.